

AMENDMENTS TO THE CLAIMS

Amended claims follow:

1. (Currently Amended) A method for execution with a system including a tangible computer readable medium, the method for retrieving instructions from video memory utilizing a texture module in a graphics pipeline, comprising:

- (a) sending an instruction request to video memory, where a texture module in a graphics pipeline sends the instruction request to the video memory; and
- (b) receiving instructions from the video memory in response to the instruction request utilizing the texture module in the graphics pipeline;

wherein an instruction set is received in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are received at a single time for performing at least one optimization operation, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

2. (Previously Presented) The method as recited in claim 1, and further comprising sending a texture request to video memory utilizing the texture module in the graphics pipeline.

3. (Previously Presented) The method as recited in claim 2, and further comprising receiving texture information from the video memory in response to the texture request utilizing the texture module in the graphics pipeline.

4. (Previously Presented) The method as recited in claim 1, wherein the video memory includes a frame buffer.

5. (Previously Presented) The method as recited in claim 4, wherein the video memory includes direct random access memory (DRAM).
6. (Original) The method as recited in claim 3, wherein the instructions are adapted for controlling a texture environment module coupled to the texture module.
7. (Original) The method as recited in claim 6, wherein the instructions control the manner in which the texture environment module processes the texture information.
8. (Original) The method as recited in claim 1, and further comprising receiving initial instructions from a rasterizer module coupled to the texture module.
9. (Original) The method as recited in claim 8, wherein the initial instructions control at least the sending of the instruction request by the texture module.
10. (Original) The method as recited in claim 3, and further comprising temporarily storing the instructions and the texture information in cache.
11. (Original) The method as recited in claim 10, wherein the cache is resident on the texture module.
12. (Previously Presented) The method as recited in claim 3, wherein each piece of texture information and each of the instructions are of a similar size in the video memory.
13. (Original) The method as recited in claim 3, and further comprising controlling the texture module utilizing a shader module coupled thereto.
14. (Original) The method as recited in claim 13, wherein the shader module controls the sending of the instruction request and the texture request by the texture module.

15. (Original) The method as recited in claim 13, wherein the shader module processes a plurality of pixels with the texture information based on the instructions.
16. (Previously Presented) The method as recited in claim 15, wherein the shader module is capable of reusing the texture information in order to request further texture information from the video memory.
17. (Original) The method as recited in claim 15, and further comprising ceasing the processing upon the receipt of a terminate instruction.
18. (Previously Presented) The method as recited in claim 1, wherein the instruction set includes a complete instruction set.
19. (Previously Presented) The method as recited in claim 1, wherein the instruction set includes a partial instruction set.
20. (Original) The method as recited in claim 19, and further comprising repeating (a) – (b) in accordance with the instructions.
21. (Original) The method as recited in claim 1, wherein (a) – (b) are carried out in accordance with the instructions received in response to the instruction request.
22. (Original) The method as recited in claim 1, wherein the texture module is adapted for operating in a plurality of different modes.
23. (Original) The method as recited in claim 22, wherein the instructions are received in a predetermined one or more of the different modes.
24. (Currently Amended) A computer program product embodied on a tangible computer readable medium, comprising:

(a) computer code for sending an instruction request to video memory, where a texture module in a graphics pipeline sends the instruction request to the video memory; and

(b) computer code for receiving instructions from the video memory in response to the instruction request utilizing the texture module in the graphics pipeline;

wherein the computer program product is operable such that an instruction set is received in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are received at a single time for performing at least one optimization operation, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein the computer program product is operable such that a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

25. (Currently Amended) A system including a tangible computer readable medium, comprising:

(a) means for sending an instruction request to video memory, where a texture module in a graphics pipeline sends the instruction request to the video memory; and

(b) means for receiving instructions from the video memory in response to the instruction request;

wherein the system is operable such that an instruction set is received in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are received at a single time for performing at least one optimization operation, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein the system is operable such that a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

26. (Currently Amended) A texture sub-system including a tangible computer readable medium, comprising:

- (a) sending an instruction request to video memory, where a texture module sends the instruction request to the video memory; and
- (b) receiving instructions from the video memory in response to the instruction request;

wherein the texture sub-system is operable such that an instruction set is received in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are received at a single time for performing at least one optimization operation, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein the texture sub-system is operable such that a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

27. (Currently Amended) A data structure stored in a frame buffer of a graphics processor including a tangible computer readable medium, the data structure for allowing the retrieval of instructions, where a texture module coupled thereto sends an instruction request to video memory, the data structure comprising an instruction object stored in the frame buffer for being retrieved therefrom in response to the instruction request utilizing the texture module in the graphics processor;

wherein the data structure is utilized such that an instruction set is retrieved from the data structure in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are retrieved at a single time

for allowing at least one optimization operation to be performed, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein the data structure is utilized such that a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

28. (Currently Amended) A method for execution with a system including a tangible computer readable medium, the method for retrieving instructions from video memory, comprising:

- (a) receiving a plurality of preliminary instructions from a rasterizer module utilizing a texture module coupled thereto;
- (b) sending an instruction request to video memory, where the texture module sends the instruction request to the video memory;
- (c) receiving additional instructions from the video memory in response to the instruction request utilizing the texture module;
- (d) caching the additional instructions on the texture module;
- (e) sending a texture request to video memory utilizing the texture module in accordance with the additional instructions;
- (f) receiving texture information from the video memory in response to the texture request utilizing the texture module;
- (g) caching the texture information on the texture module; and
- (h) repeating (b) – (g) in accordance with the additional instructions;

wherein an instruction set is received in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are received at a single time for performing at least one optimization operation, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

29. (Currently Amended) A method for execution with a system including a tangible computer readable medium, the method for retrieving instructions from video memory, comprising:

- (a) receiving a plurality of preliminary instructions from a rasterizer module utilizing a shader module coupled thereto;
- (b) sending an instruction request to video memory, where a texture module coupled to the shader module sends the instruction request to the video memory;
- (c) receiving additional instructions from the video memory in response to the instruction request utilizing the texture module;
- (d) caching the additional instructions on the texture module;
- (e) sending a texture request to video memory utilizing the texture module in accordance with the additional instructions;
- (f) receiving texture information from the video memory in response to the texture request utilizing the texture module;
- (g) caching the texture information on the texture module;
- (h) processing a plurality of pixels with the texture information utilizing the shader module in accordance with the additional instructions;
- (i) repeating (b) – (h) in accordance with the additional instructions; and
- (j) outputting the processed pixels upon receipt of additional instructions that include a terminate instruction;

wherein an instruction set is received in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are received at a single time for performing at least one optimization operation, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

30. (Currently Amended) A method for execution with a system including a tangible computer readable medium, the method for retrieving instructions from video memory utilizing a cache in a graphics pipeline, comprising:

sending an instruction request to video memory in a graphics pipeline, where a cache in the graphics pipeline sends the instruction request to the video memory; and
receiving instructions from the video memory in response to the instruction request for storage in the cache in the graphics pipeline;

wherein an instruction set is received in response to the instruction request, the instruction set including a plurality of instructions such that the plurality of instructions are received at a single time for performing at least one optimization operation, the at least one optimization operation including at least one of combining at least a portion of the plurality of instructions, modifying at least a portion of the plurality of instructions, and deleting at least a portion of the plurality of instructions;

wherein a particular texture ID is used to refer to the instruction set that is stored as an instruction texture and the particular texture ID is configured to use point sampling so the instruction set is passed without any processing.

31. (New) The method as recited in claim 1, wherein a rasterizer module coupled to the texture module sends the instruction request to an address generator, the address generator converts the instruction request into pseudo texture coordinates for the texture module, and the address generator outputs the pseudo texture coordinates such that resulting texel data is interpreted as the instruction set by the texture module.

32. (New) The method as recited in claim 1, wherein the instruction set is received as an instruction texture that contains a shader program instead of color data and is referenced by a texture coordinate, the instruction texture utilizes texture ID 0 to refer to the shader program stored as the instruction texture, and the texture ID 0 is configured to

use the point sampling so the instruction texture data that includes the shader program is not modified by a shader module.